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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
MARKETING RESEARCH DIVISION
WASHINGTON, D. C.

extending the storage life of
CABBAGE, CELERY,
LETTUCE, [illegible]

OFFICIAL U. S. NAVY
PHOTOGRAPH

...AGRICULTURE

MARKETING RESEARCH REPORT NO. 336

PREFACE

One of the basic aims of agricultural marketing research is to increase the marketing area for perishable products by reducing spoilage and lengthening the time that quality may be maintained between the shipping point and the consumer. The findings reported here resulted from research to solve problems of maintaining a supply of fresh vegetables on Navy ships that are operating at great distances from sources of supply. The results have an even wider application, such as supplies for merchant ships and overseas military bases.

Estimated savings to the Navy, through adoption of practices developed in these tests, would be approximately $250 per 1,000 crates of cabbage and $280 per 1,000 crates of celery. There would be no money savings on lettuce but good lettuce would be available longer. If polyethylene liners were used, their cost would be more than compensated for by the greater amounts of produce that remained edible in them.

ACKNOWLEDGMENT

Acknowledgment is made of the cooperation and funds furnished by the Research and Development Division, Bureau of Supplies and Accounts, U. S. Department of the Navy, which made these tests possible. Acknowledgment is also made of the excellent cooperation of personnel aboard the USS RIGEL in the tests.

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SUMMARY

Tests were conducted aboard a U. S. Navy supply ship to evaluate the effects of polyethylene liners, temperature, and trimming on the storage life of cabbage, celery, and lettuce. Also, the storage life of ripe and mature-green tomatoes held continuously at low temperatures was compared with that of tomatoes ripened at 58° F. before being stored at low temperatures.

Adoption of polyethylene liners for holding cabbage, lettuce, and celery would result in much higher quality and longer-storing commodities. Tomatoes, which are not carried as a replenishment item at the present time, would be available for replenishment purposes for periods up to 6 or 7 weeks after sailing.

After 6 weeks' storage at 36° F., 79 percent of the celery was edible in polyethylene-lined crates; only 71 percent remained edible in unlined crates.

Of the trimmed lettuce stored in lined crates at 35° F., 81 percent remained edible after 6 weeks, while only 61 percent of that stored untrimmed and in unlined crates was edible.

At the end of 4 weeks' storage at 36° F., 79 percent of the cabbage in lined crates was still edible, compared with 70 percent in the unlined crates.

The original color and crispness of cabbage were retained longer in lined than in unlined crates at both 36° and 38° F.

When mature-green tomatoes were ripened for 3 weeks at 58° F. and stored for 2 weeks at 35° F., nearly 90 percent remained edible. But when firm-ripe tomatoes were stored continuously at 35° for about the same time (34 days) only 10 percent were edible. Mature-green tomatoes stored at 35° did not ripen at all.

Celery stored in unlined crates at 36° F. and at a relative humidity of about 85 percent wilted badly during the 6-week test period. Celery stored in lined crates, on the other hand, remained crisp and firm throughout the test.

Lettuce stored in the regular ship's cargo crates at 35° F. was slightly to moderately wilted at all inspections. Weight losses in lettuce stored in lined crates never exceeded 1 percent and the heads remained crisp during the entire test. Trimmed lettuce stored in unlined crates wilted more severely than lettuce stored by any other method.

Tomatoes that were ripened before being stowed aboard ship at 35° F. kept well for approximately 3 weeks but deteriorated rapidly thereafter. The flavor and color of tomatoes ripened at Beltsville or on board ship were very good and far superior to those in tomatoes carried in the ship's store stock.

EXTENDING THE STORAGE LIFE OF CABBAGE, CELERY, LETTUCE, AND TOMATOES ABOARD A NAVY SUPPLY SHIP

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INTRODUCTION

Transportation of fresh vegetables to ships stationed in foreign waters and to overseas bases is often a major problem for the officers and crew of a U. S. Navy supply ship. Maintenance of the original quality is difficult when the vegetables must be carried aboard the ship for a month or longer. In addition, waste is sometimes considerable during the long transit and storage periods before the vegetables are consumed. Any improved methods of handling or packaging which would lengthen the storage life or maintain the original quality and reduce the amount of waste of fresh vegetables during transit would be of considerable value.

Studies were begun in 1954 at the U. S. Department of Agriculture's Plant Industry Station at Beltsville, Md., to investigate various new handling and packaging methods for prolonging storage life and maintaining quality of fresh vegetables. Supply ship conditions were simulated for these studies. Later, in the spring of 1958, a test shipment was made which used much of the information gained from the laboratory research. The test was conducted aboard the USS Rigel, a supply ship assigned to the Sixth Fleet, operating in the Mediterranean. This report is a summary of the results of that test.

PROCEDURE

Cabbage, celery, lettuce, and tomatoes were used in the tests. The tomatoes were purchased from dealers in Washington, D. C.; the other vegetables were from the ship's cargo. Sixteen crates of cabbage, 12 crates of lettuce, 8 crates of celery, and 14 lugs of tomatoes were used.

One-half of the cabbage and one-half of the celery was stored in unlined crates identical to those used in the ship's cargo. The stalks of celery in these crates were parchment wrapped. The remaining cabbage and celery was stored in polyethylene-lined crates without individual wraps. The liners measured 30 x 36 inches and were made of 0.8-mil stock. They were left unsealed but with the top edges folded over when placed in storage, to prevent any damaging modifications of the atmosphere. All crates were weighed before being placed in storage. An equal number of the lined and unlined crates of cabbage were stored at 36° and 38° F., the temperatures at which the ship's cargo of cabbage was stored. All celery was stored at 36°.

Three methods were used in preparing the lettuce for storage: (1) The outer 3 or 4 leaves were removed from each head in one-third of the lot and the trimmed heads repacked into unlined crates. (2) The heads in an additional one-third of the lot were similarly trimmed but repacked into polyethylene-lined crates. (3) The heads in the final one-third of the lot were stored in the conventional Navy manner--that is, untrimmed but wrapped in parchment and packed in unlined crates. The polyethylene liner and its method of use were similar to those used in the cabbage and celery tests. All of the test packages were weighed and stored with the ship's cargo of lettuce at 35° F.

Inspections were made approximately 3, 4, 5, and 6 weeks after the test packages were placed in storage. At each inspection 2 test packages of cabbage, 2 of celery, and 1 of lettuce were examined. The packages were reweighed immediately after removal from storage to determine the weight loss. The vegetables in the test packages were then trimmed to remove all broken, decayed, and discolored portions, and the percentage remaining edible was determined.

Fourteen lug boxes[1] of mature-green Cuban tomatoes were used in the test. Four lugs were ripened at Beltsville at 55° to 60° F. The remaining 10 lugs were taken aboard the ship in a mature-green condition. Two lugs of mature-green tomatoes and the 4 lugs of ripened tomatoes were stored at approximately 35°. The remaining 8 lugs of mature-green tomatoes were stored at 58° for ripening.

After 12 days the tomatoes at 58° F. were sorted and 3 lugs of ripened tomatoes were removed to the 35° storage room. The remaining lugs were transferred to 35° after 16 and 20 days when the tomatoes had reached a firm ripe stage.

Inspections were made approximately 3, 4, 5, and 6 weeks after loading. In addition, the final lug of tomatoes ripened aboard ship was inspected 7 weeks after loading. At each inspection the softened and decayed fruits were discarded and the percentage remaining edible was determined.

RESULTS

Cabbage

Weight Losses. Losses at both 36° and 38° were considerably greater in unlined crates than in polyethylene-lined crates. At 36° F., for example, losses in unlined crates were approximately twice as great as in lined crates at 3 of the 4 inspections (fig. 1). Losses in unlined crates at this temperature ranged from 9 to 15 percent, while those in polyethylene-lined crates never exceeded 7 percent. The losses in the lined crates would undoubtedly have been reduced further if a larger liner had been used which would have permitted an overlapping of the top edges greater than the 2 inches employed in this test with cabbage. Very little difference in weight losses was observed in similar packages at the 2 storage temperatures. Crates inspected after 3 weeks were stored near the doorway or at the top of stacks where the greatest movement of air occurred. Because of this, moisture losses in these crates were exceedingly high. Crates used at the later inspections were located within the stacks where the air movement was at a minimum.

Slight wilting was observed in some cabbage from lined crates but it was usually confined to outer leaves which were removed by the trimming. In unlined crates, however, the wilting in many instances was severe enough to affect the entire head. Even after the outer leaves were removed, the heads were often soft and flabby due to the excessive moisture loss.

Trimming Losses. The principal losses at all inspections were caused by discoloration and breakage of the outer head leaves. Losses due to decay (principally bacterial soft rot) were negligible at the 3- and 4-week inspections and only of secondary concern at the later inspections. No consistent difference was observed in the trimming losses in unlined and polyethylene-lined crates (fig. 1). Similarly, losses were about equal in crates stored at the 2 different temperatures. Trimming losses ranged from 14 to 23 percent of the original weight.

Color. The original green color of the cabbage heads, particularly of the outer leaves, was retained longer in polyethylene-lined than in unlined crates. Heads in both types of crate trimmed up well, but even after trimming, heads from the lined crates were usually a slightly darker green than those stored in unlined crates.

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[1] Inside dimensions approximately 6 7/16 by 13 1/2 by 16 1/8 inches.

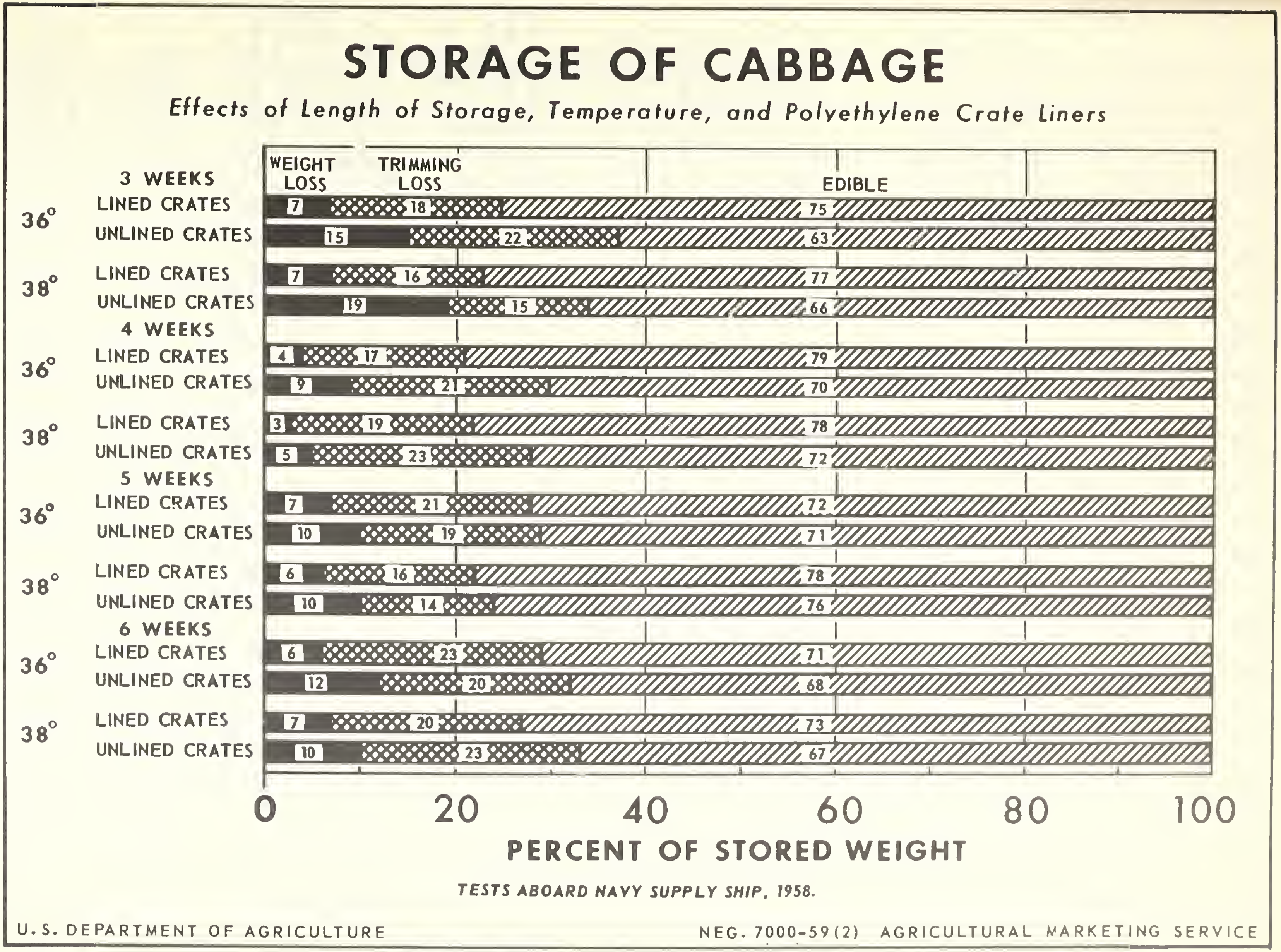

STORAGE OF CABBAGE
Effects of Length of Storage, Temperature, and Polyethylene Crate Liners
WEIGHT LOSS
TRIMMING LOSS
EDIBLE
3 WEEKS
36°
LINED CRATES 7 18 75
UNLINED CRATES 15 22 63
38°
LINED CRATES 7 16 77
UNLINED CRATES 19 15 66
4 WEEKS
36°
LINED CRATES 4 17 79
UNLINED CRATES 9 21 70
38°
LINED CRATES 3 19 78
UNLINED CRATES 5 23 72
5 WEEKS
36°
LINED CRATES 7 21 72
UNLINED CRATES 10 19 71
38°
LINED CRATES 6 16 78
UNLINED CRATES 10 14 76
6 WEEKS
36°
LINED CRATES 6 23 71
UNLINED CRATES 12 20 68
38°
LINED CRATES 7 20 73
UNLINED CRATES 10 23 67
0
20
40
60
80
100
PERCENT OF STORED WEIGHT
TESTS ABOARD NAVY SUPPLY SHIP, 1958.
U.S. DEPARTMENT OF AGRICULTURE
NEG. 7000-59(2)
AGRICULTURAL MARKETING SERVICE

Figure 1

Edibility. At every inspection a greater percentage of the stored cabbage remained edible in polyethylene-lined than in unlined crates, principally because of the smaller weight loss in the lined crates. At 36° F., the most marked differences were noted at the 3- and 4-week inspections--12 percent of the stored weight after 3 weeks and 9 percent after 4 weeks (fig. 1). Considerably smaller differences were noted at the later inspections. Similar differences in the amounts of edible cabbage in the 2 packages were observed at 38°. While the percentage of edible cabbage decreased very little after the first inspection (3 weeks storage), it was apparent at the last inspection that the prevalence of decay in the crates would cause a rapid decline if the storage period was extended.

Temperature. The differential of only 2 degrees in the temperatures used aboard ship for holding cabbage accounts for the similarity of results obtained in the 2 storage compartments. It was previously observed in tests at Beltsville that storing cabbage at 33° and 38° F. also gave very similar results. However, both of these temperatures gave much better results than 45°. From this experience it seems apparent that cabbage can be stored about equally well at temperatures of 33° to 38°, particularly for periods not exceeding 6 weeks. Higher temperatures would definitely be detrimental to the storage life of cabbage.

Celery

Weight Losses. Celery, which contains approximately 94 percent water when fresh, rapidly loses moisture to the atmosphere unless stored in exceptionally high relative humidities. Such humidities are seldom present in ordinary storage spaces but they can be maintained by the use of humidifiers or by enclosing the celery in protective coverings which retard the escape of moisture from the stalks. Polyethylene liners, being fairly impermeable to the passage of water vapor, proved very effective in retaining the original moisture and crispness of the celery. Weight losses in polyethylene-lined crates averaged about 3.3 percent during the test while losses in regular unlined crates ranged from 4 percent after 3 weeks to 10 percent at the 6-week inspection (fig. 2). Celery in polyethylene-lined crates was crisp and fresh-appearing at each inspection, but celery in unlined crates increased in flabbiness as the storage period lengthened.

Approximately one-third of the stalks removed from the unlined crates at the 6-week, or final, inspection were extremely wilted and unfit for use without reconditioning. Wilting was particularly severe in the stalks immediately adjacent to the sides, top, and bottom of the crate. Pithiness in the outer leafstalks of celery in unlined crates was also common as a result of the loss of moisture. The parchment wraps used in the unlined crates, while probably of some slight benefit in reducing moisture losses in celery, were considerably inferior in this respect to polyethylene liners.

Trimming Losses. At the first inspection the percentage of trim loss was slightly less in unlined than in polyethylene-lined crates, but at the 3 later inspections the least loss was observed in the lined crates (fig. 2). The principal decay, bacterial soft rot, was noted in both lined and unlined crates at the first inspection and increased in severity as the storage period lengthened. At the final 6-week inspection diseased leafstalks were completely slimy. Decay was generally confined to the lower portions of the outer leafstalks, but at the later inspections, small amounts were observed in the upper portions also. Grey mold rot was observed at the later inspections but was a minor decay problem.

Color and Appearance. The color of the celery remained good throughout the test with little blanching. No major color differences were noted between celery stored in polyethylene-lined and unlined crates although the celery in lined crates was always fresher in appearance than that in unlined crates.

Edibility. Equal amounts of celery remained edible in unlined and in polyethylene-lined crates after 3 weeks. After 4, 5, and 6 weeks in storage, however, more remained edible in the lined crates (fig. 2). Edible celery generally decreased with the storage period.

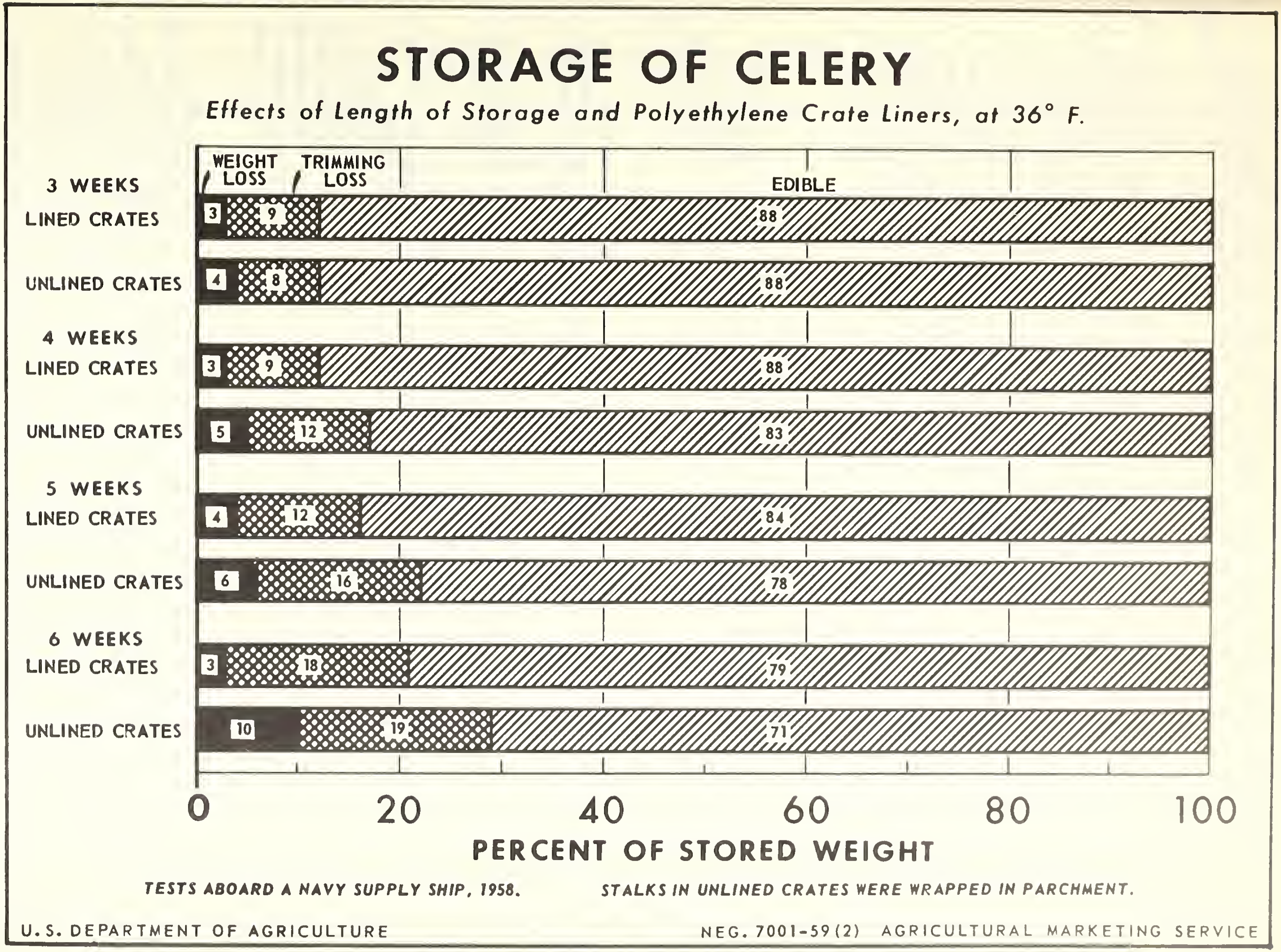

STORAGE OF CELERY
Effects of Length of Storage and Polyethylene Crate Liners, at 36° F.
WEIGHT LOSS
TRIMMING LOSS
EDIBLE
3 WEEKS
LINED CRATES
3
9
88
UNLINED CRATES
4
8
88
4 WEEKS
LINED CRATES
3
9
88
UNLINED CRATES
5
12
83
5 WEEKS
LINED CRATES
4
12
84
UNLINED CRATES
6
16
78
6 WEEKS
LINED CRATES
3
18
79
UNLINED CRATES
10
19
71
0
20
40
60
80
100
PERCENT OF STORED WEIGHT
TESTS ABOARD A NAVY SUPPLY SHIP, 1958.
STALKS IN UNLINED CRATES WERE WRAPPED IN PARCHMENT.
U.S. DEPARTMENT OF AGRICULTURE
NEG. 7001-59(2) AGRICULTURAL MARKETING SERVICE

Figure 2

After 3 weeks in storage 88 percent of the celery in the 2 types of packages remained edible. This percentage dropped, after 6 weeks, to 71 in unlined crates and to 79 in polyethylene-lined crates. As noted previously, much of the celery taken from unlined crates at the later inspections, although considered edible, was not of top quality because of wilting. Edible celery from lined crates was always of excellent quality.

Temperature. Butt temperatures of the celery in the storage compartment, taken en route and during replenishments of individual ships, averaged about 36° F. during the test period. The replenishments, consisting of the transfer of supplies from the holds and deck of the supply ship to the receiving ships, each required from 20 minutes to 3 hours to complete. Entrances to the storage compartments of the supply ship were opened a considerable portion of these periods for the removal of supplies. The lowest temperature recorded after departure from Norfolk was 34.5°. The highest, recorded immediately after a replenishment, was 37.3°. Previous tests at Beltsville have shown that celery keeps considerably better at 33° than at 38°, and an average temperature nearer 32° aboard ship would undoubtedly have given the best results. Temperature readings of celery stored at deck level and at about 4 feet and 8 feet above indicated no consistent difference at the 3 levels. The temperature of celery rose slightly when placed on the main deck awaiting arrival of ships alongside for replenishment. The greatest increase was about 5°. In general, fresh vegetables were transferred with a minimum of delay to the waiting ships.

Lettuce

Weight Losses. At every inspection weight losses within the storage room were greatest in unlined crates and were negligible in polyethylene-lined crates (fig. 3). Losses in regular ship's cargo crates in which the untrimmed heads were individually wrapped in parchment ranged from 2 percent after 3 weeks in storage to 6 percent after 6 weeks. Due to this loss of moisture, lettuce in these crates was flabby, particularly at the later inspections.

Lettuce trimmed and stored in unlined crates lost considerably more moisture than in any other method of storing, and was exceedingly flabby at all inspections. Lettuce stored by this method lost as much as 10 percent of its original weight during 5 weeks in storage.

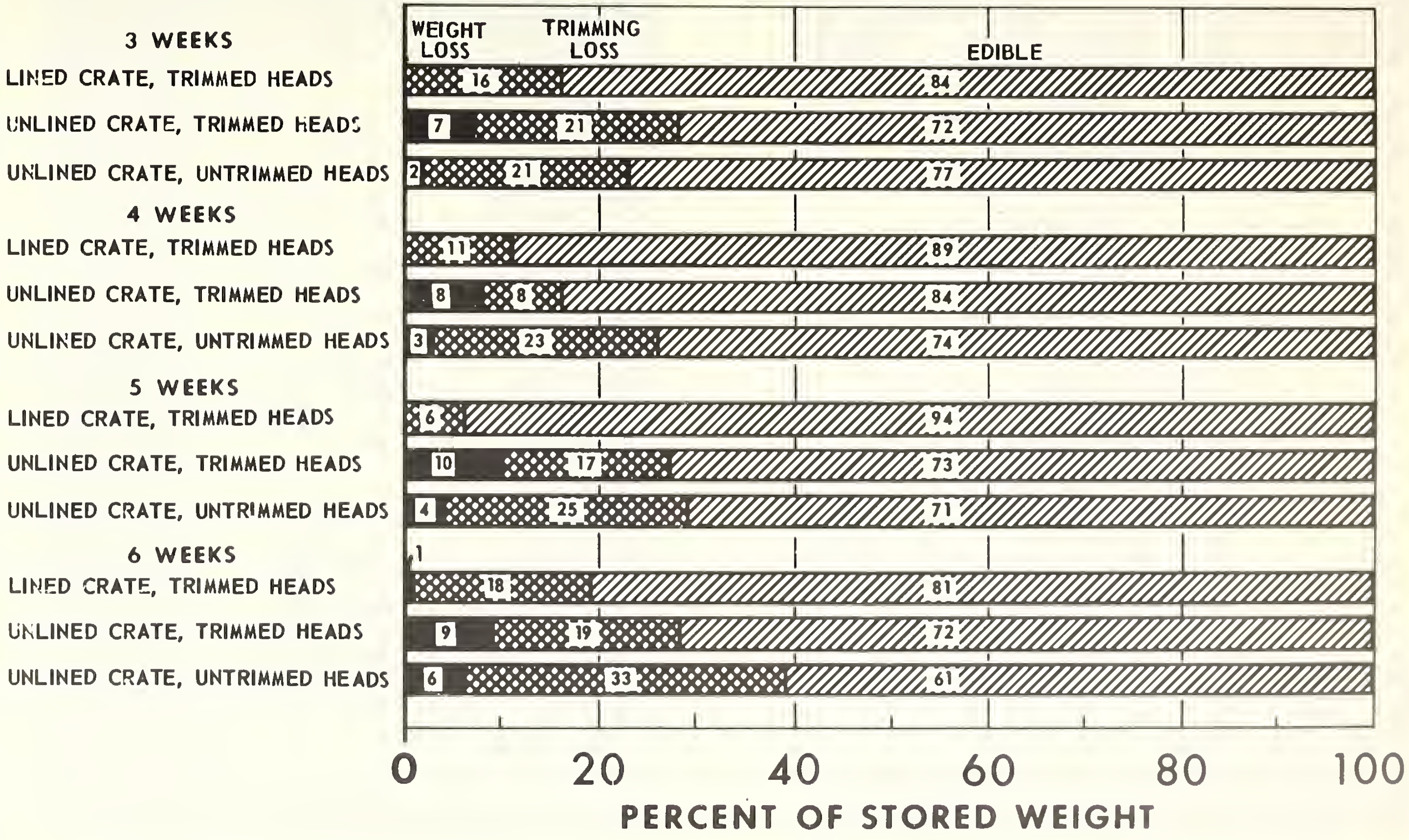
Trimmed heads of lettuce stored in polyethylene-lined crates lost no moisture during 5 weeks in storage and only 1 percent during the entire 6-week test period. Obviously, the lettuce in these crates remained crisp and firm throughout the test.

It is evident from the data on weight losses in this test that lettuce becomes wilted or flabby during long storage periods at even relatively high humidities unless some protection against drying is provided. This is especially true when trimmed heads are stored, as the missing outer leaves, in themselves, would afford some protection. The use of parchment wraps undoubtedly reduced the moisture losses in the untrimmed heads from the ship's cargo but not enough to prevent wilting. Polyethylene crate liners offered far greater protection against drying and eliminated all visible signs of wilting. Lettuce in lined crates was apparently as crisp and firm after 6 weeks in storage as on the loading date.

Trimming Losses. Untrimmed heads of lettuce in regular ship's cargo crates deteriorated much more rapidly in storage than trimmed heads. The principal cause of this rapid deterioration was decay of the outer leaves left on the untrimmed heads. These leaves, usually broken and bruised, discolored and decayed rapidly in storage, and were completely slimy at the 5- and 6-week inspections (fig. 4). The loss in crates of trimmed heads was confined principally to breakage and wilting. The smallest losses were generally noted in polyethylene-lined crates containing trimmed heads. During the test, trimmed heads in lined crates had an average trim loss of 13 percent. Trimmed heads in unlined crates had an average loss of 16 percent while untrimmed heads in unlined crates as carried in the ship's cargo had an average loss of 25 percent (fig. 3).

STORAGE OF LETTUCE

Effects of Length of Storage, Trimming Before Storage, and Polyethylene Crate Liners, 35° F.



TESTS ABOARD NAVY SUPPLY SHIP, 1958. *UNTRIMMED LETTUCE IN UNLINED CRATES WAS WRAPPED IN PARCHMENT.*

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Figure 3

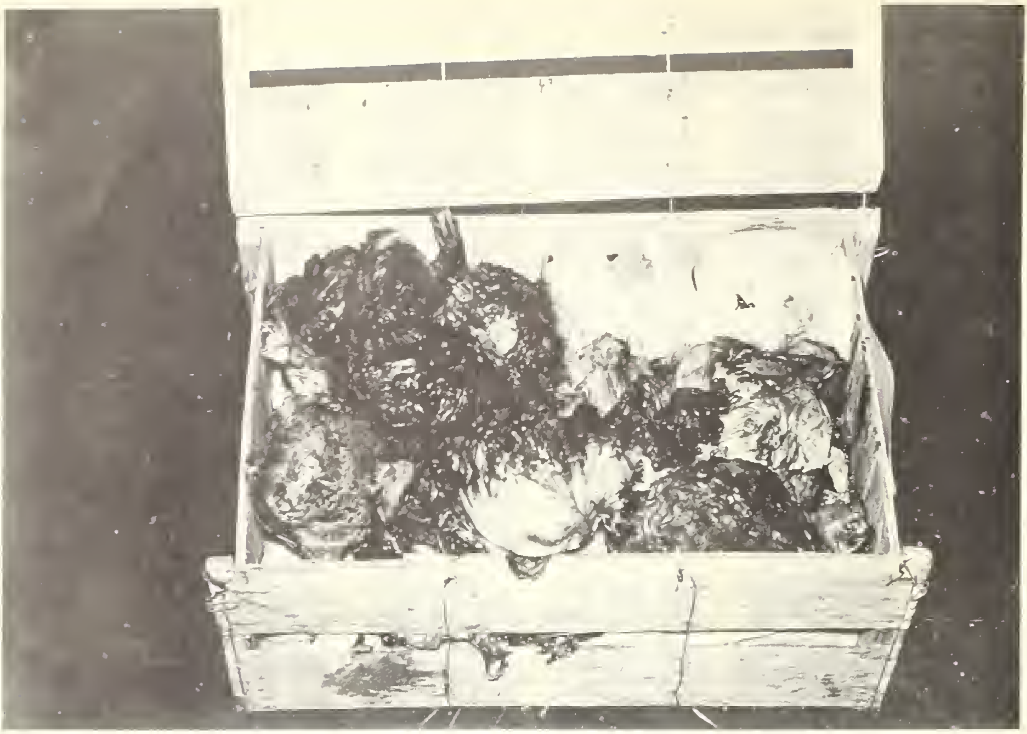

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Figure 4.--Lettuce from ship's cargo after 6 weeks at 35° F. Parchment is removed from all but 2 heads to show decayed condition.

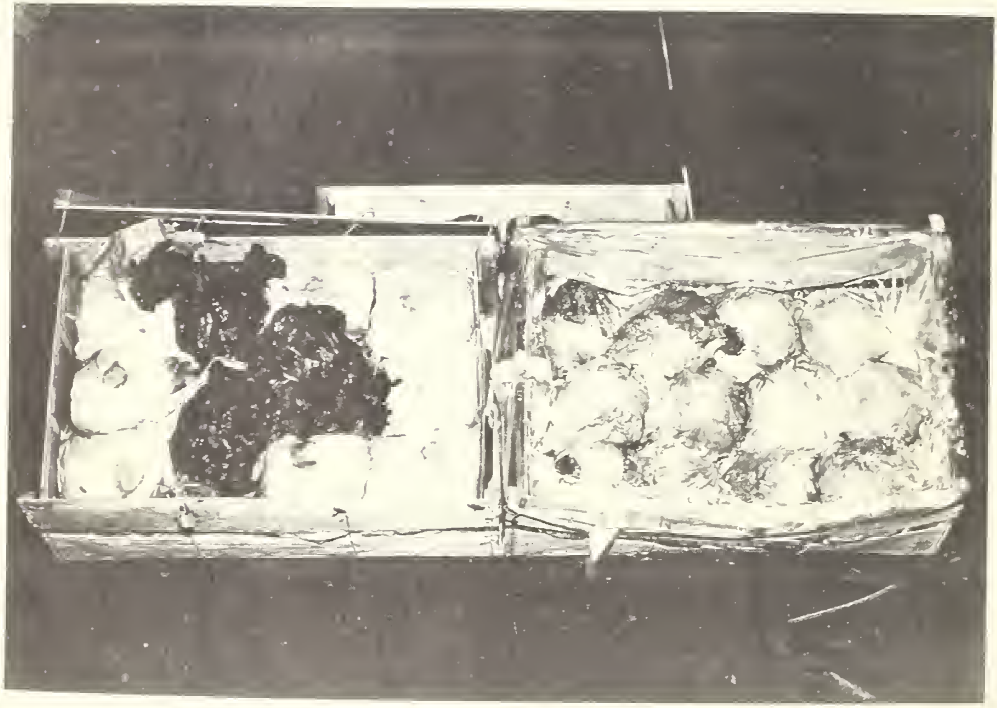

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Figure 5.--Lettuce after 6 weeks at 35° F. in regular ship's cargo crates with parchment removed from some heads to show decayed condition (left), and in polyethylene-lined crates.

It seems apparent from the data on losses, principally through evaporation and trimming, that removing the outer leaves of lettuce before storage reduces the weight and volume to be stored without reducing the percentage of edible lettuce. Trimming also reduces subsequent decay but, at the same time, it increases susceptibility to drying. The use of polyethylene liners, however, eliminates drying and still retains the benefits of trimming. A full crate of untrimmed heads of lettuce weighing 37 pounds and occupying about 2 cubic feet, yielded 26 pounds of edible lettuce after 5 weeks' storage at 35° F. Quality of the lettuce after storage was only fair because of moisture losses. A polyethylene-lined crate of lettuce with the heads trimmed before storage, weighing only 28 pounds, and which would occupy approximately one-fourth less space than the first crate, yielded the same amount of edible lettuce after the same storage period. Quality of this lettuce after storage was excellent.

Edibility. Lettuce trimmed and stored in polyethylene-lined crates remained edible longer than lettuce handled in any other way. Untrimmed lettuce in unlined crates usually gave the poorest results. Because of serious drying, trimmed lettuce stored in unlined crates gave only slightly better results than untrimmed lettuce. An average of 87 percent of the trimmed lettuce stored in polyethylene-lined crates remained usable during the test. Trimmed lettuce stored in unlined crates remained 75 percent usable, while only 71 percent of the untrimmed lettuce in the ship's cargo remained usable. Figure 5 shows the difference, after 6 weeks, between parchment wrapped, untrimmed heads stored in an unlined crate and unwrapped trimmed heads stored in a polyethylene-lined crate.

Tomatoes

Mature-green tomatoes stored at 35° F. failed to ripen during the entire test period. A faint yellow color was present in some of the tomatoes at the final inspection but none ripened sufficiently to be considered edible. Decay spread rapidly in these tomatoes, advancing from 16 percent after 30 days in storage to 41 percent 10 days later (table 1).

Tomatoes ripened at Beltsville and stowed aboard ship at 35° F. kept well for 3 weeks but deteriorated rapidly thereafter. At the 20-day inspection, for example, 80 percent were edible and had excellent color, flavor, and texture. Ten days later the percentage had dropped to 37, and 20 days later to 1. The major cause of deterioration during this period was a water-soaked type of breakdown and blue mold rot. It is evident from these results that ripened tomatoes have a relatively short storage life and could be used only for replenishments made within 3 weeks of departure. During this period, however, excellent quality tomatoes would be available.

Mature-green tomatoes ripened at 58° F. aboard ship before storing at 35° kept considerably longer than those handled in any other way. Twenty days after sailing, 96 percent of the fruits in the 2 inspected lugs were in good condition. Two weeks later, at the time of the last replenishment, 89 percent of the tomatoes examined were firm and of good eating quality. The final lug of fruits ripened aboard ship was examined the day before returning to Norfolk, 48 days after departure. Forty-eight percent of the fruits were edible and sufficiently firm for slicing. Eleven fruits in the final lug were unusable because they failed to ripen properly. These 11 fruits represented only 1-1/2 percent of the total number ripened aboard ship. Because mature-green tomatoes required 2 to 2 1/2 weeks at 58° for proper ripening they were not available for the first replenishments. Storing a small lot of fruit showing 30 to 50 percent color at 58° would have provided satisfactory fruit for the first replenishments.

Tomatoes were carried in the ship's store stock for use in the general mess. They were in excellent condition and showed a small amount of color when purchased. These fruits were stored continuously at 37° F. At this low temperature, the tomatoes failed to ripen properly and remained predominantly yellow throughout their storage life. Moderate to severe decay was present after 3 1/2 weeks. They were usable for 4 to 5 weeks but considerable sorting and trimming were required during the latter stages to obtain a sufficient amount of sound fruit. The flavor of the tomatoes was only fair during the entire time they were used.

TABLE 1.--Storage life of tomatoes stored ripe or mature-green at 35° F. or after ripening at 58° and storage at 35° aboard ship

Condition of fruits stored, temperature, and days stored	Total fruits	Edible fruits[1]	Softened fruits[2]	Decayed fruits
	Number	*Percent*	*Percent*	*Percent*
Mature green, 35° F.:				
20 days	83	([3])	6	2
30 days	83	([3])	4	16
34 days	81	([3])	1	25
40 days	81	([3])	2	41
Mature green:[4]				
20 days (12 days 58° F., 8 days 35° F.)	180	96	0	4
30 days (16 days 58° F., 14 days 35° F.)	180	94	2	2
34 days (20 days 58° F., 14 days 35° F.)	176	89	7	4
40 days (20 days 58° F., 20 days 35° F.)	89	84	9	7
48 days (20 days 58° F., 28 days 35° F.)	90	48	37	[5] 15
Firm ripe, 35° F.:				
20 days	83	80	8	12
30 days	75	37	12	51
34 days	90	10	3	87
40 days	90	1	3	96

[1] Includes only fruits that were suitable for slicing.

[2] Fruits in a stage of physiological breakdown which reduced their quality and made their use questionable.

[3] No mature-green fruits stored continuously at 35° F. ripened sufficiently to be considered edible.

[4] Ripened at 58° F. for period indicated then held at 35°.

[5] Includes fruit which failed to ripen properly.

RECOMMENDATIONS

Lettuce.

Store at 32° to 35° F. Remove loose wrapper leaves before storing to reduce weight, volume, and subsequent decay. Store in polyethylene-lined crates or in individual polyethylene bags to reduce moisture loss and maintain quality.

Celery.

Store at 32° to 35° F. Store in polyethylene-lined crates or in individual polyethylene bags.

Cabbage.

Store at 32° to 38° F. The use of polyethylene liners is recommended, as many tests have demonstrated that the quality of fresh cabbage is maintained longer in lined than in unlined crates. Considering the slight demand for cabbage, however, the additional cost may not be justified at the present time.

Tomatoes.

Store mature-green tomatoes at approximately 58° F. until firm ripe; then store at 33° - 35°. Fruit handled in this way would be available for replenishment purposes for 2 1/2 to 6 weeks after departure date. For replenishments during the first 2 1/2 weeks, a supplemental lot of tomatoes turning red should be stored in a similar manner.

Type of polyethylene container.

Polyethylene crate liners and individual bags have been found to be about equally beneficial in the storage of fresh vegetables, and both are recommended for that purpose. However, some difficulty has been experienced in repacking lettuce and celery into polyethylene liners and it is believed that use of individual bags may be more practical. Only ventilated polyethylene containers should be used for the storage of these vegetables.

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